Bay Area Air Quality Management District

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Permit Evaluation
and
Statement of Basis
for
MAJOR FACILITY REVIEW PERMIT

for

Shoreline Amphitheatre
Facility #A2561

Facility Address:
One Amphitheatre Parkway
City of Mountain View, CA 94043

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City of Mountain View, CA 94043

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Title V Statement of Basis

A. Background

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Volume 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a designated facility as defined by BAAQMD Regulation 2-6-204. The Emission Guidelines for Municipal Solid Waste Landfills (40 CFR Part 60, Subpart Cc) require the owner or operator of a landfill that is subject to this part and that has a design capacity of greater than or equal to 2.5 million mega grams and 2.5 million cubic meters to obtain an operating permit pursuant to Part 70. As discussed in more detail below in Section C.IV. of this report, this facility is subject to these emission guidelines and meets the designated facility criteria listed in 40 CFR § 60.32c(c).

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all applicable requirements (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, record keeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This facility identifier is also considered to be the identifier for the permit.

B. Facility Description

The Shoreline Amphitheatre (Facility # A2561) is located in the City of Mountain View, east of Highway 101, near Shoreline Boulevard. This facility is owned and operated by Bill Graham Presents. This site includes the Landfill and Gas Collection System (S-1), a Carbon Adsorption System (A-1), a Landfill Gas Flare (A-2), and a Diesel Engine for an Emergency Standby Generator (S-3).

The Shoreline Amphitheatre was constructed on top of a small portion of the closed Vista Landfill (542,000 yd^3 or 414,400 m^3). The remaining portion of the Vista Landfill (5,167,900 yd^3 or 3,951,100 m^3) is owned and operated by the City of Mountain View (Facility # A2740). No waste has been placed in the Vista Landfill for more than 15 years. Although the portion of the Vista Landfill that is controlled by Shoreline Amphitheatre is less than the size thresholds (2.5 million m^3 and 2.5 million Mg) that trigger the Title V permitting requirements pursuant to 40 CFR § 60.32c(c), these size thresholds apply to all solid waste disposal sites located on contiguous property. Since the Vista Landfill, the 544 Acre Landfill, and the Crittenden Landfill

are located on contiguous property, the combined size of these three landfills was used to determine Title V applicability for these landfills. The combined size of the three contiguous landfills is 18.2 million yd^3 (13.9 million m^3) and 13.1 million tons (11.9 million Mg). Therefore, a Title V Permit is required for all three landfills. This permit describes the requirements that apply to the Vista Landfill and all equipment that is owned and operated by Shoreline Amphitheatre (Facility # A2561). The Title V permit for the City of Mountain View (Facility # A2740) describes the requirements for the Vista Landfill, the 544 Acre Landfill, the Crittenden Landfill, and all gas collection and control equipment owned and operated by the City of Mountain View.

As required by various local, state, and federal regulations, the landfill at this site is equipped with an active landfill gas collection system. Landfill gas collection systems are perforated pipes that are buried in the refuse at numerous locations. For active collection systems, the perforated pipes are connected to blowers by solid pipes (referred to as laterals and headers). The blowers maintain a vacuum in the buried refuse and draw landfill gas into the perforated pipes. The blowers then vent this collected landfill gas to control equipment. For active landfills, the perforated pipes are often placed horizontally in the refuse as filling progresses. Perforated pipes can also be installed vertically by drilling holes into refuse areas and placing the perforated pipes within these wells. Shoreline Amphitheatre's gas collection system consists of a total of 61 collection components (35 horizontal collectors and 26 vertical wells). These components collect landfill gas from the portion of the Vista Landfill that is located directly below the lawn seating area of the Shoreline Amphitheatre.

Collected landfill gas is typically vented to the A-2 Landfill Gas Flare. This flare destroys most of the methane, precursor organic compounds, non-precursor organic compounds, and toxic compounds in the landfill gas, but also produces secondary combustion pollutants including: nitrogen oxides, carbon monoxide, sulfur dioxide, particulate matter, formaldehyde, and hydrogen chloride.

The A-2 Landfill Gas Flare must be shut down occasionally for inspection and maintenance and may periodically be shut down due to upset conditions or a breakdown. For most landfills, the gas collection system is shut down whenever the control system is not functioning, because the District prohibits facilities that are subject to BAAQMD Regulation 8, Rule 34 from venting raw landfill gas to the atmosphere. For this facility, however, the landfill gas collection system must be operated continuously whenever the Shoreline Amphitheatre is occupied, in order to protect patrons from potential landfill gas exposure and fire hazards. Therefore, collected landfill gas must be vented to an alternative control device, whenever A-2 is not operating and the Shoreline Amphitheatre is occupied. The alternative control device is the A-1 Carbon Adsorption System. The permit conditions for this facility require collected landfill gas to be vented to the A-1 Carbon Adsorption System, whenever the A-2 Landfill Gas Flare is not operating and also allow collected landfill gas to be vented to A-1 and A-2 in series.

This facility also has a Diesel Engine for an Emergency Standby Generator (S-3) that provides minimal power to amphitheatre operations in the event of a power failure.

C. Permit Content

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

I. Standard Conditions

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Condition I.J has been added to clarify that the capacity limits shown in Table II-A are enforceable limits.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S-24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Regulation 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons of a "regulated air pollutant," as defined in BAAQMD Regulation 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Regulation 2-6-210, per year.

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement devices table but will have an "S" number. An abatement device that is also a source (such as a thermal oxidizer that burns fuel) will have an "A" number.

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the

maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

The equipment list has changed since the facility applied for a Title V permit on April 9, 2001. The S-3 Diesel Engine for Emergency Standby Generator was not listed in Shoreline Amphitheatre's application. This source lost its exemption from District permitting requirements on August 1, 2001 due to a change of District regulations and was issued a Permit to Operate on September 19, 2002.

III. Generally Applicable Requirements

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered a significant source pursuant to the definition in BAAQMD Regulation 2-6-239. This facility does not have any significant sources that do not have District Permits to Operate.

IV. Source-Specific Applicable Requirements

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules and Regulations
- SIP Rules (if any) are listed following the corresponding District regulations. SIP rules are District regulations that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are federally enforceable and a "Y" (yes) indication will appear in the "Federally Enforceable" column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the "Federally Enforceable" column will have a "Y" for "yes". If the SIP rule is not the current District rule, the SIP rule or the necessary portions of the SIP rule are cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.
- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District's or EPA's websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Complex Applicability Determinations

Landfills and landfill gas combustion equipment are subject to BAAQMD Regulation 8, Rule 34. This regulation requires landfills that have more than 1 million tons of refuse in place to collect and control the landfill gas that is generated by waste decomposition and specifies numerous operating, monitoring, and reporting requirements for subject operations. Regulation 8, Rule 34 has required that the Vista Landfill (including the portion of Vista Landfill controlled by Shoreline Amphitheatre) be controlled by an active landfill gas collection system and a landfill gas control system since 1987.

Landfills and landfill gas combustion equipment may also be subject to either the federal New Source Performance Standards (NSPS) for Municipal Solid Waste (MSW) Landfills or the Emission Guidelines (EG) for MSW Landfills. The federal NSPS for MSW Landfills (40 CFR Part 60, Subpart WWW) applies to landfills that have had a design capacity modification after May 30, 1991. The EG for MSW Landfills (40 CFR Part 60, Subpart Cc) applies to landfills that have had no design capacity modification since May 30, 1991 but that have accepted waste since November 8, 1987. In accordance with the definition of MSW Landfill in 40 CFR 60.751, the landfill includes the entire disposal facility in a contiguous area. As discussed in Section B, the 544 Acre Landfill and the Crittenden Landfill (which are both controlled by the City of Mountain View) are contiguous to the Vista Landfill (part of which is controlled by Shoreline Amphitheatre and part of which is controlled by the City of Mountain View). Therefore, the NSPS and EG applicability criteria pertain to the entire Shoreline Disposal Facility (544 Acre, Crittenden, and Vista Landfills). The Shoreline Disposal Facility has had no design capacity modifications since May 30, 1991, but waste was accepted after November 8, 1987. Therefore the EG is applicable to this entire disposal facility.

The BAAQMD implemented the EG by amending Regulation 8, Rule 34 on October 6, 1999. Initially, Bay Area landfills were subject to the Federal Plan for MSW Landfills (40 CFR Part 62, Subpart GGG) until EPA incorporated the October 1999 amendments to Regulation 8, Rule 34 into the California State Plan for MSW Landfills (40 CFR § 62.1115). On September 20, 2001, EPA amended the California State Plan to include the BAAQMD's October 1999 amendments and amended the Federal Plan to remove Bay Area landfills from the Federal Plan, effective November 19, 2001. Therefore, BAAQMD Regulation 8, Rule 34, as amended on October 1999, is federally enforceable. In addition, the October 1999 amendments were adopted into the SIP, effective August 30, 2002.

In accordance with the EG, BAAQMD Regulation 8, Rule 34 requires large landfills (with a design capacity greater than or equal to 2.5 million Mg and greater than or equal to 2.5 million m^3) to be equipped with landfill gas collection and control systems. The EG (40 CFR § 60.32c(c)) requires the owner or operator of a landfill meeting these design capacity criteria to

obtain a Title V operating permit pursuant to 40 CFR, Part 70. The design capacity of the Shoreline Disposal Facility exceeds these design capacity applicability criteria. Accordingly, both the City of Mountain View (Facility # A2740) and Shoreline Amphitheatre (Facility # A2561) were required to submit applications for Title V permits by April 6, 2001. This permit includes all equipment operated by Shoreline Amphitheatre. Equipment operated by the City of Mountain View is covered in a separate permit for Facility #A2740.

Effective July 1, 2002, subject landfills and the associated collection and control systems were required to meet numerous new operating, monitoring, and reporting requirements. These requirements are specified in detail in Section IV of the permit. Landfill operations, landfill gas combustion devices, and diesel engines are also subject to numerous other BAAQMD regulations and permit conditions. All applicable requirements are described in Section IV of the permit.

V. Schedule of Compliance

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

"409.10 A schedule of compliance containing the following elements:

10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;

10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and

10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted."

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

The BAAQMD Compliance and Enforcement Division has conducted a review of compliance for the period of August 1, 2001 to July 31, 2002 and found no records of compliance problems at this facility. The compliance report is contained in Appendix A of this permit evaluation and statement of basis.

VI. Permit Conditions

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

While the District has authority to revise the existing permits, and is doing so here concomitantly with the Title V process, it also has authority to supplement the terms of existing permits through the Title V process itself. When necessary to meet Title V requirements, additional monitoring, record keeping, or reporting has been added to the permit.

All changes to existing permit conditions are clearly shown in "strike-out/underline" format in the proposed permit. When the permit is issued, all 'strike-out" language will be deleted; all "underline" language will be retained.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 et seq., an order of abatement pursuant to H&SC § 42450 et seq., or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

The District has reviewed and, where appropriate, revised or added new annual and daily throughput limits on sources to ensure compliance with District rules addressing preconstruction review, Regulation 2-1-301. For a grandfathered source (which in this case is the landfill) limits are being added to the existing permits pursuant to the authority in Regulation 2-1-403, which provides the District with authority to "impose any permit condition [it] deems reasonably necessary to insure compliance with federal or California law or District regulations." Creating throughput limits for grandfathered sources is not required by either Part 70 or the District's MFR rules. However, issuance of the Title V permit is an opportunity for the District to exercise authority under Regulation 2-1-403 by adding conditions to the District operating permit through a parallel process, that is, by revising the P/O concurrently with the Title V permit issuance. The District believes the addition of these throughput limits is authorized under Regulation 2-6-409.2.2, as these limits will help "assure compliance" with the District preconstruction review program.

The applicability of preconstruction review (Regulation 2-1-301) depends on whether there is a "modified source" as defined in District Regulation 2-1-234. Whether there is a modified source depends in part on whether there has been an "increase" in "emission level." Regulation 2-1-234 defines what will be considered an emission level increase, and takes a somewhat different approach depending on whether a source has previously been permitted by the District. Sources that were modified or constructed since the District began issuing new source review permits generally will have permits that contain throughput limits, and these limits are reflected in the Title V permit. These limits have previously undergone District review, and are considered to be the legally binding "emission level" for purposes of Regulations 2-1-234.1 and 2-1-234.2. In contrast, for "grandfathered" sources that have not had preconstruction review, an "increase" in "emission level" is addressed in Regulation 2-1-234.3. A grandfathered source is not subject to preconstruction review unless its emission level increases above the highest of: 1) the design capacity of the source, 2) the capacity listed in a permit to operate, or 3) highest capacity demonstrated prior to March 2000. However, if the throughput capacity of a grandfathered source is limited by upstream or downstream equipment (i.e., is "bottlenecked"), then the relaxing of that limitation ("debottlenecking") is considered a modification.

In proposing throughput limits for grandfathered sources, the District has described the limits differently based on the factual support in the record. The limit may be a reporting threshold, in which case if the limit is exceeded and not reported, a permit violation has occurred. It may be a firm throughput limit, so that a violation occurs whenever the limit is exceeded. Or, it may be a Regulation 2-1-234.3 modification threshold, in which case exceedence of the limit triggers a requirement to obtain an Authority to Construct. Where the information in the record is indicative of a Regulation 2-1-234.3 threshold, but not definitive in that regard, the limit is structured as a reporting threshold, and as presumptively an emissions limit and a modification threshold. When the information in the record is definitive, the limit is structured as a firm throughput limit and a modification threshold. It would be redundant for a limit to function as both a reporting threshold and a throughput limit, and so the latter precludes the former.

As noted above for presumptive limits, exceedence of the limit is not per se a violation of the permit. *Failure to report an exceedence is a permit violation.* If an exceedence occurs, the facility has an opportunity to demonstrate that the throughput limit does not reflect the appropriate limit for purposes of Regulation 2-1-234.3. If the facility can demonstrate this, no enforcement action would follow, and the permit would be revised at the next opportunity. It also follows that compliance with these limits is not a "safe harbor" for the facility. If evidence clearly shows that a grandfathered source has undergone a "modification" as defined in Regulation 2-1-234.3, the District would consider that a preconstruction review-triggering event, regardless of compliance with the throughput limit in the Title V permit. There is no Title V "permit shield" associated with throughput limits for grandfathered sources.

Conditions that are obsolete or that have no regulatory basis have been deleted from the permit.

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the APCO to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO that limits a source to the operations described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit pursuant to Regulation 2, Rule 2.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Parameter monitoring has been added for each abatement device. Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

The reasons for the changes to each condition are discussed below.

Condition # 876 for: S-1, Landfill and Gas Collection System; A-1, Carbon Adsorption System; and A-2, Landfill Gas Flare

Part 1: Waste acceptance limits were added to define the capacity of the landfill, which is a grandfathered source. Since this landfill is closed, no daily waste acceptance is permitted. The total cumulative waste disposal limit and the design capacity limit pertain to regulation of VOC emissions from decomposing waste in the landfill. These limits were determined from information provided on Shoreline Amphitheatre's Annual Update Information Form and a February 23, 1998 correspondence from the City of Mountain View describing the capacities of the entire Shoreline Disposal Facility (including Vista, Crittenden, and the 544 Acre Landfills). All limits in this part are proposed as firm throughput limits and modification thresholds, so that any change to these rates constitutes a modification of the landfill source as defined in Regulation 2-1-234.4 and is subject to the Authority to Construct requirements of Regulation 2-1-301.

Part 2: This part was added to clearly identify the landfill gas collection system components that are subject to BAAQMD Regulation 8-34-305 and are required to be monitored monthly pursuant to BAAQMD Regulation 8-34-505. This part also identifies changes to the collection system that are subject to the Authority to Construct requirements of BAAQMD Regulation 2-1-301.

Part 3: This part clarifies the BAAQMD Regulation 8-34-301.1 requirement to operate the landfill gas collection system continuously by identifying specific actions that are prohibited. These actions prevent the collection system from being in continuous operation, as defined in BAAQMD Regulation 8-34-219.

Part 4: This part replaces part 3 from the original permit conditions. This part identifies the landfill gas control devices that must be used to control the collected landfill gas and clarifies when each device may be used. Language was added to prohibit the intentional venting of raw untreated landfill gas.

Part 5: This part was added to identify the heat input limits for the A-2 Landfill Gas Flare, which define the maximum rated capacity for this equipment. These limits were derived from the information in Permit Application # 32284. These heat input limits combined with the nitrogen oxide and carbon monoxide emission concentration limits in Parts 6 and 7 will ensure that emissions will not increase as a result of a replacement or modification that increases the capacity of a permitted source without a preconstruction permit review.

Part 6: The NO_x emission rate in the permit application for this flare is an implied limit. For the MFR permit, an explicit NO_x limit is necessary to show that the flare is operating properly and that the allowable emission rate has not been exceeded. This emission limit is derived below based on the maximum emission rate that was reported in Permit Application # 32284 (0.12 pounds of NO_x per million BTU). The landfill gas is assumed to contain 55% methane with a heating value of 557 BTU/ft^3 at 60 °F (547 BTU/scf). (Definitions of the terms used below are contained in the glossary.)

(0.12 pounds NO_x/MM BTU)/(10^6 BTU/MM BTU)*(557 BTU/ft^3 LFG)/(5.1506 ft^3 flue gas, dry, 0% O_2/ft^3 LFG)/(3.521 ft^3 flue gas, 15% O_2/1.0 ft^3 flue gas, 0% O_2)/(46.01 pounds NO_x/lbmol)* (379.5 ft^3/lbmol) = 3.04 E-5 ft^3 of NO_x/ft^3 of flue gas at 15% O_2
= 30.4 ppmv of NO_x at 15% O_2, dry basis

Part 7: The CO emission rate in the permit application for this flare is an implied limit. For the MFR permit, an explicit CO limit is necessary in order to verify that the flare is operating properly and that the allowable emission rate has not been exceeded. The emission limit is derived below based on the maximum emission rate that was reported in Permit Application # 32284 (0.08 pounds of CO per million BTU). The landfill gas is assumed to contain 55% methane with a heating value of 557 BTU/ft^3 at 60 °F (547 BTU/scf). (Definitions of the terms used below are contained in the glossary.)
(0.08 pounds CO/MM BTU)/(10^6 BTU/MM BTU)*(557 BTU/ft^3 LFG)/(5.1506 ft^3 flue gas, dry, 0% O_2/ft^3 LFG)/(3.521 ft^3 flue gas, 15% O_2/1.0 ft^3 flue gas, 0% O_2)/(28.01 pounds CO/lbmol)* (379.5 ft^3/lbmol) = 3.33 E-5 ft^3 of CO/ft^3 of flue gas at 15% O_2
= 33.3 ppmv of CO at 15% O_2, dry basis

Part 8: This part replaces part 1 of the original conditions. The minimum temperature limit was changed to a minimum temperature averaged over any three-hour period for consistency with the federal Emission Guidelines for MSW Landfills. This part incorporates the EG procedure for establishing a minimum temperature limit based on source test results. The District previously required a minimum temperature of 1400 °F to ensure adequate destruction of toxic compounds. Since this facility has occasionally experienced difficulty in maintaining a minimum combustion zone temperature of 1400 °F, the District added subpart b to give the facility additional compliance options. Subpart b allows the flare to operate at less than 1400 °F (but not less than 1200 °F) if the landfill gas is pretreated by the A-1 Carbon Adsorption System. Finally, this part identifies the basis for the flare temperature limits.

Part 9: This part replaces part 2 of the original conditions, which is now obsolete. Part 2 allowed the flare to operate without a continuous temperature recorder. However, the November 17, 1993 amendments to BAAQMD Regulation 8, Rule 34 added Section 501.3, which requires continuous temperature records for all landfill gas flares that are required to be operating continuously. This facility has been operating a continuous temperature recorder on this flare for many years. Part 9 clarifies that A-2 must be equipped with both a continuous temperature monitor and a continuous recorder and identifies the basis for these requirements.

Part 10: This part replaces part 4 of the original conditions that required auto restart capability and alarms. Part 10 clarifies the meaning of auto restart capability and identifies the basis for these equipment requirements.

Part 11: This part replaces part 5 of the original conditions. The District added the gas flow meter and recorder requirements (BAAQMD Regulations 8-34-508 and 501.10) that became effective on July 1, 2002. Part 11 was updated for consistency with these regulations.

Part 12: This part was added to describe the operating configuration and minimum carbon requirements for the A-1 Carbon Adsorption System. This condition clarifies the equipment

required for proper operation of A-1. It also ensures that emissions will not increase as a result of a replacement or modification of A-1 without a preconstruction review permit.

Part 13: This part was added to describe the key emission control system operating parameter that will ensure compliance with BAAQMD Regulation 8-34-301.4, during times when the collected landfill gas is vented to the A-1 Carbon Adsorption System.

Part 14: This part was added to identify the procedures for and frequency of monitoring for the key emission control system operating parameter. The total carbon weight for two canisters operating in series is 270 pounds of carbon. Carbon adsorbers can typically adsorb an amount of organic compounds equal to approximately 30% of the carbon weight (or about 81 pounds for A-1) before the carbon is spent. The maximum exhaust flow rate to A-1 is 300 scfm of landfill gas. Based on default landfill gas composition data (AP-42 Chapter 2.4), the collection system will vent about 2.4 pounds/hour of NMOC to A-1, as shown below:
(300 ft^3 LFG/min)*(60 min/hour)*(595 ft^3 NMOC/10^6 ft^3 LFG)/(387 ft^3 NMOC/lbmol NMOC)*(86.18 pounds NMOC/lbmol) = 2.385 pounds/hour of NMOC
Therefore, carbon breakthrough is expected after about 34 hours of operation (81 pounds/2.4 pounds/hour). To ensure that the carbon is functioning properly, monitoring is required every 16 hours of operation, with additional monitoring required as the exhaust concentration approaches the Regulation 8-34-301.4 limit of 120 ppmv of NMOC (expressed as methane at 3% oxygen, dry basis).

Part 15: All landfill gas combustion equipment is subject to the BAAQMD Regulation 9-2-302 limit of no more than 300 ppmv of SO_2 in the exhaust (dry basis). Under theoretical combustion conditions, 300 ppmv of SO_2 in the exhaust is equal to 1300 ppmv of H_2S in landfill gas. This part explains that a landfill gas H_2S limit will be used as a surrogate for demonstrating compliance with the BAAQMD Regulation 9-2-302 sulfur dioxide limit. Although the sulfur content of landfill gas can vary, District analyses of Bay Area landfill gas have shown no instances where the H_2S concentration has exceeded 400 ppmv. Therefore, quarterly monitoring of the sulfur content in the landfill gas is appropriate for demonstrating compliance with the landfill gas H_2S limit.

Part 16: Part 6 of the original conditions describes some source testing procedures but does not specify a source testing requirement or frequency. Part 16 corrects this by establishing annual source testing, as required by BAAQMD Regulation 8-34-412, specifying the compounds that must be tested, and providing notification, testing, and reporting procedures.

Part 17: Part 17 describes the annual landfill gas characterization, which is required pursuant to BAAQMD Regulation 8-34-412, in more detail.

Part 18: Record keeping requirements were added to ensure compliance with the collection system and control system continuous operation requirements of Regulation 8-34-301.1, the operating and monitoring requirements for the A-1 Carbon Adsorption System, the heat input limits of Part 5, the landfill gas sulfur limit and monitoring requirements of Part 15, and several other Regulation 8, Rule 34 monitoring and record keeping requirements.

Part 19: The MSW Landfill NESHAP (40 CFR, Part 63, Subpart AAAA) that was adopted by EPA on 1/16/03 requires landfill operators to submit semi-annual reports instead of the annual report required by Regulation 8-34-411. The effective date for the semi-annual reporting frequency is January 16, 2004. This permit condition was added in order to establish the semi-annual reporting frequency and to synchronize the reporting periods and submittal dates for this report with the semi-annual MFR monitoring reports that will be required by Section I.F. of this MFR Permit.

Condition # 19912 for: S-3, Diesel Engine for Emergency Standby Generator

The only changes to these conditions are the addition of an asterisk (*) before all the non-federally enforceable requirements. The only federally enforceable requirement is Part 5d, which requires that the Permit Holder maintain records of the vendor certified sulfur content for any fuels burned in S-3. These records are necessary to assure compliance with the federally enforceable limit on fuel sulfur content (0.5% by weight) contained in BAAQMD Regulation 9-1-304.

VII. Applicable Limits and Compliance Monitoring Requirements

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

The tables below contain only the limits for which there is no monitoring or inadequate monitoring in the applicable requirements. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided when no monitoring is proposed due to the size of a source.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) the degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements**.** It follows that, although Title V calls for a re-examination of all monitoring**,** there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. When a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation**.** Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise

the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate**.**

NO_x Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-2 Landfill Gas Flare	BAAQMD Condition # 876, Part 6	$\leq$ 30 ppmv of NO_x, corrected to 15% O_2, dry	Annual Source Test

NO_x Discussion:
The District has imposed an annual source test requirement for NO_x limits at landfill gas fired flares in other Title V permits. Annual source testing is a standard monitoring method for engines that are used for control of landfill gas. Flares control a comparable quantity of landfill gas and have much lower emissions. Therefore annual source testing is adequate.

CO Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-2 Landfill Gas Flare	BAAQMD Condition # 876, Part 7	$\leq$ 33 ppmv of CO, corrected to 15% O_2, dry	Annual Source Test

CO Discussion:
The District has imposed an annual source test requirement for CO limits at landfill gas fired flares in other Title V permits. Annual source testing is a standard monitoring method for engines that are used for control of landfill gas. Flares control a comparable quantity of landfill gas and have much lower emissions. Therefore annual source testing is adequate.

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-3 Diesel Engine for Emergency Standby Generator	BAAQMD 9-1-301	Property Line Ground Level SO_2 Limits: $\leq$ 0.5 ppm for 3 minutes and $\leq$ 0.25 ppm for 60 min. and $\leq$ 0.05 ppm for 24 hours	None
A-2 Landfill Gas Flare	BAAQMD 9-1-301	Property Line Ground Level SO_2 Limits: $\leq$ 0.5 ppm for 3 minutes and $\leq$ 0.25 ppm for 60 min. and $\leq$ 0.05 ppm for 24 hours	None
A-2 Landfill Gas Flare	BAAQMD 9-1-302	Gas Stream SO_2 Limit: $\leq$ 300 ppm (dry)	Quarterly Sulfur Analysis of Landfill Gas
S-3 Diesel Engine for Emergency Standby Generator	BAAQMD 9-1-304	Fuel Sulfur Content Limit: $\leq$ 0.5% sulfur by weight	Records
S-1 Landfill and Gas Collection System	BAAQMD Condition # 876, Part 15	Landfill Gas Sulfur Content Limit: $\leq$ 1300 ppmv of TRS as H_2S	Quarterly Sulfur Analysis of Landfill Gas

SO_2 Discussion:

Potential to Emit Calculations for S-3 Diesel Engine for Standby Emergency Generator:

Maximum potential SO_2 emissions are based on the maximum fuel sulfur content of 0.5% sulfur by weight from BAAQMD Regulation 9-1-302.
(23.0 gallons fuel/hour)*(7.1 pounds fuel/gallon fuel)*(0.005 pounds sulfur/pound fuel)/ (32.06 pounds sulfur/lbmol sulfur)*(1 lbmol SO_2/lbmol sulfur)*(64.06 pounds SO_2/lbmol SO_2)*(24 hours/day)*(365 days/year)/(2000 pounds SO_2/ton SO_2) = 7.15 tons SO_2/year

Potential to Emit Calculations for A-2 Landfill Gas Flare:

For worst case SO_2 calculations, the landfill gas is assumed to contain 45% methane with a heating value of 456 BTU/ft^3 at 60 °F.
(86.4 MM BTU/day)*(10^6 BTU/1 MM BTU)/(456 BTU/ft^3 LFG)*(1300 ft^3 H_2S/10^6 ft^3 LFG)/ (379.5 ft^3 H_2S/lbmol H_2S)*(1 lbmol SO_2/1 lbmol H_2S)*(64.06 pounds SO_2/lbmol SO_2)* (365 days/year)/(2000 pounds SO_2/ton SO_2) = 7.59 tons SO_2/year

Definitions of the terms used above are contained in the glossary.

BAAQMD Regulation 9-1-301: As discussed below for BAAQMD Regulation 9-1-302 and 9-1-304, this facility will be subject to federally enforceable limits, which will ensure compliance with the BAAQMD Regulation 9-1-302 gas stream emission limit of 300 ppmv of SO_2 in the flare exhaust and with the BAAQMD Regulation 9-1-304 fuel sulfur content limit of 0.5% sulfur by weight. Sources complying with the BAAQMD Regulation 9-1-302 or 9-1-304 limits are not expected to result in an excess of the ground level concentration limits listed in BAAQMD Regulation 9-1-301. Monitoring for ground level SO_2 concentrations in addition to the proposed landfill gas monitoring and record keeping requirements would not be appropriate.

Maximum potential SO_2 emissions from this facility are 14.74 tons/year. This is not substantial. Furthermore, actual SO_2 emissions are expected to be much lower (less than 2.4 tons/year). The S-3 Diesel Engine is rarely operated (less than 100 hours/year for testing and usually less than 200 hours per year for emergency operation), and the diesel fuel used at S-3 is expected to meet the more stringent CARB fuel oil limit of 0.05% sulfur by weight. Consequently, actual SO_2 emissions from S-3 are expected to be less than 0.03 tons/year. District analyses of Bay Area landfill gas have found no instances where the total reduced sulfur (TRS) content exceeds 400 ppmv, expressed as H_2S. Therefore, actual SO_2 emissions from the A-2 Landfill Gas Flare are expected to be less than 2.34 tons/year.

BAAQMD Regulation 9-1-302: This facility will be subject to a federally enforceable limit of 1300 ppmv of TRS in the landfill gas (BAAQMD Condition # 876, Part 15). This limit will ensure compliance with the BAAQMD Regulation 9-1-302 emission limit of 300 ppmv of SO_2 in the engine exhaust, because the air required for combustion dilutes the concentration of sulfur dioxide in the exhaust compared to the concentration of sulfur in the landfill gas. Staff has proposed permit conditions that require the landfill gas to be monitored for TRS content, measured as H_2S, (on a quarterly basis) to ensure compliance with the landfill gas concentration limit of 1300 ppmv of TRS. District analyses have not found any Bay Area landfill gas containing more than 400 ppmv of TRS (expressed as H_2S), which is less than a third of the allowable emission rate.

BAAQMD Regulation 9-1-304: In accordance with BAAQMD Condition # 19912, Part 5d, this facility is required to maintain records of vendor certified sulfur content for all fuels burned in the S-3 Diesel Engine for Emergency Standby Generator. The use of vendor certification is a standard method of monitoring for compliance with a liquid fuel sulfur content limit.

BAAQMD Condition # 876, Part 15: In accordance with BAAQMD Condition # 876, Part 15, this facility will be required to monitor for TRS content (measured as H_2S) in the landfill gas on a quarterly basis using a draeger tube. The use of a draeger tube is a standard method of monitoring for TRS content in landfill gas.

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-2 Landfill Gas Flare	BAAQMD 6-301	Ringelmann 1.0	None
S-3 Diesel Engine for Emergency Standby Generator	BAAQMD 6-303	Ringelmann 2.0	None
S-3 Diesel Engine for Emergency Standby Generator	BAAQMD 6-310	0.15 gr/dscf	None
A-2 Landfill Gas Flare	BAAQMD 6-310	0.15 gr/dscf	None

PM Discussion:

Potential to Emit Calculations for S-3 Diesel Engine for Standby Emergency Generator:

The maximum potential PM_{10} emissions from S-3 are based on an AP-42 emission factor: 0.0022 pounds/bhp-hour and continuous operation.
(0.0022 pounds PM_{10}/bhp-hour)*(484 bhp)*(24 hours/day)*(365 days/year)/(2000 pounds/ton) = 4.66 tons/year of PM_{10}

Based on historical operating records, this engine is not expected to operate for more than 300 hours/year. Actual emissions are expected to be less than 0.2 tons/year of PM_{10}.

Potential to Emit Calculations for A-2 Landfill Gas Flare:

The maximum potential PM_{10} emissions from A-2 are based on an AP-42 emission factor: 17 pounds/MM dscf methane (CH_4) and continuous operation.
(86.4 MM BTU/day)/(1013 MM BTU/MM ft^3 CH_4)*(17 pounds PM_{10}/MM ft^3 CH_4)*
(365 days/year)/(2000 pounds/ton) = 0.26 tons PM_{10}/year

BAAQMD Regulation 6-301 for A-2 Landfill Gas Flare: Visible particulate emissions are normally not associated with combustion of gaseous fuels, such as natural gas or landfill gas. Since maximum potential particulate emissions are not significant (<0.3 tons/year) and violations of Ringelmann 1.0 limit are not expected, periodic monitoring for the Ringelmann limit would not be appropriate for this flare.

BAAQMD Regulation 6-303 for S–3 Diesel Engine for Emergency Standby Generator: This small diesel fired engine is used to provide power to emergency lights and refrigeration units during a power failure. It is operated only a few hours per month for reliability testing and has historically been operated fewer than 300 hours/year. Operation is infrequent and mainly unpredictable. Such engines generally are able to meet a Ringelmann No. 2 limit. Since the likelihood of non-compliance is low, maximum potential emissions are not substantial (<4.7 tons/year of PM_{10}), and actual emissions are expected to be insignificant, periodic monitoring for the Ringelmann limit would not be appropriate for this engine.

BAAQMD Regulation 6-310 for S–3 Diesel Engine for Emergency Standby Generator: BAAQMD Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using the AP-42 emission factor and diesel oil data, a typical diesel oil flue gas production rate of 9190 dscf/MM BTU at 0% oxygen, and typical flue gas oxygen content of 15%, the particulate grain loading in the engine exhaust is expected to be 0.073 grains/dscf at 15% oxygen.
(0.0022 pounds PM_{10}/bhp-hour)*(484 bhp)*(7000 grains/pound)/(23.0 gallons/hour)/
(7.1 pounds/gallon)/(0.0193 MM BTU/pound)/(9190 dscf/MM BTU)*(20.9-15)/(20.9-0)
= 0.073 grains/dscf flue gas, dry, 15% O_2
The compliance margin with the Regulation 6-310 limit is about 2:1. Periodic monitoring for compliance this limit would not be appropriate for S-3, because particulate emissions are low and source testing for PM emissions from standby engines is difficult and costly.

BAAQMD Regulation 6-310 for A-2 Landfill Gas Flare: Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Using the AP-42 emission factor for landfill gas combustion in a flare (17 pounds PM_{10}/MM ft_3 CH4) and typical landfill gas data (heat content of 547 BTU/scf of landfill gas at 55% methane), the particulate grain loading in the flare exhaust is calculated to be 0.013 grains/dscf at 0% oxygen.
(17 pounds PM_{10}/MM ft^3 CH_4)*(7000 grains/pound)/(8.55E6 dscf, 0% O_2/MM ft^3 CH_4)
= 0.014 grains/dscf at 0% O_2
The grain loading limit is far above any expected PM emissions with a compliance ratio (limit/emissions) of 10.7:1. It would therefore not be appropriate to add periodic monitoring for this standard.

Organic Compound Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
A-1 Carbon Adsorption System	BAAQMD 8-34-301.4	98% removal of NMOC by weight OR Outlet Concentration < 120 ppmv of NMOC, expressed as methane, @ 3% O_2, dry basis	Periodic Testing of A-1 exhaust with a Portable Analyzer
A-1 Carbon Adsorption System	BAAQMD Condition # 876, Part 13	Replace carbon when exhaust concentration exceeds 108 ppmv of NMOC, expressed as methane, @ 3% O_2, dry basis	Periodic Testing of A-1 exhaust with a Portable Analyzer

Organic Compound Discussion:

BAAQMD Regulation 8-34-301.4 and BAAQMD Condition # 876, Part 13: BAAQMD Regulation 8-34-509 requires operators of equipment that is subject to the BAAQMD Regulation 8-34-301.4 limit to monitor this equipment for one or more key emission control system operating parameters. However, this regulation does not identify which parameters should be monitored, does not specify how frequently parameters should be monitored, and does not establish appropriate operating ranges for the parameters. The District imposed BAAQMD Conditions # 876, Parts 13, 14, and 18g to resolve this ambiguous monitoring requirement.

H_2S Sources

S# & Description	Emission Limit Citation	Emission Limit (Not Federally Enforceable)	Monitoring
S-1 Landfill and Gas Collection System	BAAQMD 9-2-301	Property line ground level limits: ≤ 0.06 ppm Averaged over 3 minutes and ≤ 0.03 ppm Averaged over 60 minutes	None
A-1 Carbon Adsorption System	BAAQMD 9-2-301	Property line ground level limits: ≤ 0.06 ppm Averaged over 3 minutes and ≤ 0.03 ppm Averaged over 60 minutes	None
A-2 Landfill Gas Flare	BAAQMD 9-2-301	Property line ground level limits: ≤ 0.06 ppm Averaged over 3 minutes and ≤ 0.03 ppm Averaged over 60 minutes	None

Hydrogen Sulfide (H_2S) Discussion:

BAAQMD Regulation 9-2-301: Hydrogen sulfide can be detected by its odor at concentrations as low as 0.0005 ppmv and is generally identified by its characteristic rotten egg smell at a concentration of 0.005 ppmv or less. Therefore, H_2S emissions are typically discovered by smell well before the concentration approaches the lowest Regulation 9-2-301 emission limit of 0.03 ppmv. The District rarely ever receives complaints about hydrogen sulfide odors from Bay Area landfills and has never received any complaints about hydrogen sulfide odors from this facility. Since H_2S odors have not been detected at this facility, the concentration of H_2S at the property line is expected to be well below the Regulation 9-1-301 limits. Furthermore, the maximum expected H_2S emissions are not significant (less than 2 tons/year) and the BAAQMD Regulation 9-2-301 emission limits are not federally enforceable. Monitoring for ground level H_2S concentrations would not be appropriate for such low emission rates when no H_2S odor problem exists.

Other Limits

S# & Description	Limit Citation	Federally Enforceable Limit	Monitoring
A-2 Landfill Gas Flare	BAAQMD Condition # 876, Part 5	Heat Input Limit: ≤ 86.4 MM BTU per day and ≤ 31,536 MM BTU per year	Gas Flow Meter and Records of Operating Times

Other Limits Discussion:

BAAQMD Condition # 876, Part 5: The use of a gas flow meter and records is a standard method for monitoring heat input limits at flares.

VIII. Test Methods

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not applicable requirements.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section VI of the permit.

IX. Permit Shield:

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in an MFR permit explaining that specific federally enforceable regulations and standards are not applicable to a source or group of sources, or (2) A provision in an MFR permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA's White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program. The District uses the second type of permit shield for all streamlining of monitoring, record keeping, and reporting requirements in Title V permits. The District's program does not allow other types of streamlining in Title V permits.

This facility has no permit shields. This permit has no streamlining. The applicant did not request any permit shields or streamlining.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

A July 31, 2002 office memorandum, from the Director of Compliance and Enforcement to the Director of Permit Services, presents a review of the compliance record of Shoreline Amphitheatre (Site #A2561). The Compliance and Enforcement Division staff has reviewed the records for Site #A2561 for the period between August 1, 2001 through July 31, 2002. This review was initiated as part of the District evaluation of an application by Shoreline Amphitheatre for a Title V permit. During the review period:

- There were no Notices of Violation issued during this review period.
- The District did not receive any complaints.
- The facility is not operating under a Variance or an Order for Abatement from the District's Hearing Board.
- There were no monitor excesses or equipment breakdowns reported or documented by District staff.

The owner certified that all equipment was operating in compliance on April 5, 2001. No non-compliance issues have been identified to date.

F. Differences between the Application and the Proposed Permit:

The Title V permit application was originally submitted April 9, 2001 and completed on February 8, 2002. The February 8, 2002 version is the basis for the proposed Title V permit.

The proposed permit includes the S-1 Landfill and Gas Collection System, S-3 Diesel Engine for Emergency Standby Generator, A-1 Carbon Adsorption System, and A-2 Landfill Gas Flare. This equipment, except for S-3, was listed in the MFR permit application. The District issued the Permit to Operate for S-3 on September 19, 2002. This engine was previously exempt from District permit requirements pursuant to BAAQMD Regulation 2-1-114.2.3 (as amended on May 17, 2000), but lost its exemption status when BAAQMD Regulation 2, Rule 1 was amended on August 1, 2001. Shoreline Amphitheatre submitted Permit Application # 6284 for a Permit to Operate for this engine.

For S-1, A-1, and A-2, the applicant cited the permit conditions as the only applicable requirements. The proposed permit includes all requirements that are applicable to this equipment. The District added applicable requirements from the following regulations: BAAQMD Regulation 1; BAAQMD Regulation 6; BAAQMD Regulation 8, Rule 34; BAAQMD Regulation 9, Rule 1; BAAQMD Regulation 9, Rule 2; 40 CFR Part 60, Subpart A; 40 CFR Part 60, and Subpart Cc; 40 CFR Part 62; 40 CFR Part 63, Subpart A; and 40 CFR Part 63, Subpart AAAA. Note that 40 CFR 62.1115 did not become effective until November 19, 2001 (after the application was submitted). Also, the NESHAP for MSW Landfills (40 CFR Part 63, Subpart AAAA) was adopted by EPA on January 16, 2003. The NESHAP requirements (Subparts A and AAAA) are not applicable until January 16, 2004.

In this Permit, the District is proposing to replace Parts 1-6 of Condition #876 for S-1, A-1, and A-2 with Parts 1-19. Parts 1-19 include clarifications of current requirements, throughput and

emission limits for equipment with no existing throughput or emission limits, and monitoring requirements for limits that did not have adequate monitoring. For Condition # 19912, the non-federally enforceable requirements are identified.

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APPENDIX A

BAAQMD COMPLIANCE REPORT

APPENDIX B
GLOSSARY

ACT
Federal Clean Air Act

APCO
Air Pollution Control Officer: Head of Bay Area Air Quality Management District

ARB
Air Resources Board

BAAQMD
Bay Area Air Quality Management District

BACT
Best Available Control Technology

Basis
The underlying authority which allows the District to impose requirements.

CAA
The federal Clean Air Act

CAAQS
California Ambient Air Quality Standards

CAPCOA
California Air Pollution Control Officers Association

CARB
California Air Resources Board (same as ARB)

CEQA
California Environmental Quality Act

CFR
The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

CH4 or CH_4
Methane

CO
Carbon Monoxide

CT
Combustion Zone Temperature

Cumulative Increase
The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

District
The Bay Area Air Quality Management District

EG
Emission Guidelines

EPA
The federal Environmental Protection Agency.

Excluded
Not subject to any District regulations.

Federally Enforceable, FE
All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (MACT), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

FP
Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

H2S or H_2S
Hydrogen Sulfide

HAP
Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

HHV
Higher Heating Value. The quantity of heat evolved as determined by a calorimeter where the combustion products are cooled to 60F and all water vapor is condensed to liquid.

LFG
Landfill gas

Major Facility
A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

MAX or Max.
Maximum

MFR
Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

MIN or Min.
Minimum

MOP
The District's Manual of Procedures.

MSW
Municipal solid waste

MW
Molecular weight

NA
Not Applicable

NAAQS
National Ambient Air Quality Standards

NESHAPS
National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63.

NMHC
Non-methane Hydrocarbons (Same as NMOC)

NMOC
Non-methane Organic Compounds (Same as NMHC)

NOx or NO_x
Oxides of nitrogen.

NSPS
Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

NSR
New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

O2 or O_2
Oxygen

Offset Requirement
A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NOx, PM10, and SO2.

Phase II Acid Rain Facility
A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

POC
Precursor Organic Compounds

PM
Particulate Matter

PM10 or PM_{10}
Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

PSD
Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

RMP
Risk Management Plan

SIP
State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

SO2 or SO_2
Sulfur dioxide

SSM
Startup, Shutdown, or Malfunction

SSM Plan
A plan, which states the procedures that will be followed during a startup, shutdown, or malfunction, that is prepared in accordance with the general NESHAP provisions (40 CFR Part 63, Subpart A) and maintained on site at the facility.

THC
Total Hydrocarbons (NMHC + Methane)

Title V
Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

TOC
Total Organic Compounds (NMOC + Methane, Same as THC)

TPH
Total Petroleum Hydrocarbons

TRMP
Toxic Risk Management Policy

TRS
Total Reduced Sulfur

TSP
Total Suspended Particulate

VOC
Volatile Organic Compounds

Symbols:

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to

Units of Measure:

bhp	=	brake-horsepower
btu	=	British Thermal Unit
BTU	=	British Thermal Unit
°C	=	degrees Centigrade
cfm	=	cubic feet per minute
dscf	=	dry standard cubic feet
°F	=	degrees Fahrenheit
ft^3	=	cubic feet
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grains
hp	=	horsepower
hr	=	hour
lb	=	pound
lbmol	=	pound-mole
in	=	inches

m^2	=	square meter
m^3	=	cubic meters
min	=	minute
mm	=	million
MM	=	million
MM BTU	=	million BTU
MMcf	=	million cubic feet
Mg	=	mega grams
ppb	=	parts per billion
ppbv	=	parts per billion, by volume
ppm	=	parts per million
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scf	=	standard cubic feet
scfm	=	standard cubic feet per minute
sdcf	=	standard dry cubic feet
sdcfm	=	standard dry cubic feet per minute
yd	=	yard
yd^3	=	cubic yards
yr	=	year